1960

A Study of Differences between Free and Controlled Association at the Eighth Grade Level

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A STUDY OF DIFFERENCES BETWEEN FREE AND CONTROLLED ASSOCIATION AT THE EIGHTH GRADE LEVEL

by

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A Thesis Submitted to the Faculty of the Graduate School of Loyola University in Partial Fulfillment of the Requirements for the Degree of Master of Arts

June

1960

LIFE

The author, Donald J. Rumann, was born in Chicago, Illinois on May 5, 1930. He graduated from Holy Ghost High School, East Troy, Wisconsin, in June, 1948. After receiving his Bachelor of Arts degree at St. Procopius College, Lisle, Illinois in June, 1954, he served with the United States Marine Corps for three years. He worked at the Loyola Center for Guidance and Psychological Service while attending Loyola University.

ACKNOWLEDGEMENTS

Grateful acknowledgement is made to Drs. F. J. Kobler and E. P. Marx, and Rev. V. V. Herr, S. J. for their guidance and helpful advice in the preparation and writing of this thesis.

Deep appreciation is also expressed to the Rev. C. I. Doyle, S. J., for his helpful guidance in designing and conducting this study and for the arranging of the printing of the test booklets.

To the principals, teachers, and students of the five schools used in this study, namely, Saint Basil and Holy Name parochial schools and Cohn, Brennan and Mount Greenwood public schools, I am also deeply indebted.

I wish to also acknowledge the help and encouragement given me by my wife in the writing of this thesis.

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CHAPTER I

INTRODUCTION

While the role and importance of the free association technique in both the detection and cure of mental disorders and abnormalities has long been recognized and used by many psychiatrists and psychologists in their dealings with patients (Landis and Bolles, 1956), the exact place and utility of a modified or controlled association test has never been completely understood or accepted. Although the reasons for this hesistancy and reluctance to accept and use a controlled association test, especially as a diagnostic tool, are many and varied, undoubtedly the biggest deterents have been the general inability to agree upon what is precisely meant by the term, "controlled" association, and the failure to produce a satisfactory, universal test.

The Loyola Language Study, a modified form of the Kent-Rosanoff Association Test, is one attempt at developing such a standardized controlled association test for use as a diagnostic tool. The rationale of this particular test is that normals will yield responses more in common with each other than the mentally ill (Snider, 1954).

Numerous investigations have been undertaken to improve and better refine this test (Herr, 1957; Del Vecchio, 1957; Even, 1958; Guppy, 1959). All of these studies, however, have concerned themselves with the test's use on, and with an adult population. The question arises, though, as to the possibilities of using such a test as this with children and early adolescents. Before one can answer this question, however, it must first be demonstrated that

differences do exist between the free and controlled association of children at this level of development.

It is the purpose of this study, then, to compare and contrast the free association responses of a random group of eighth-grade boys and girls with those elicited by the instructions of the Loyola Language Study. By this study we hope to determine if differences exist between the free and controlled associations of boys and girls to this list of words; if these differences are statistically significant; and if so, to establish norms for the Loyola Language Study for use with children at the eighth-grade level.

CHAPTER II

REVIEW OF RELATED LITERATURE

Although Kraepelin and Freud were the first to use the free association method outside of the laboratories of Wundt and Galton (Kohs, 1914; Landis & Bolles, 1956), Jung was the first to formalize its use as a test procedure. A list of 100 words chosen to represent emotional complexes was first used at the beginning of the 20th century. The immediate administration of the second test required the person to recall his first reaction. Jung felt that it was possible to discover a concealed complex by means of a stimulus word. Personal experience with patients convinced him that an inadequate or inappropriate response was not a function of intellectual defect, but rather an indication of an emotional disturbance. He maintained that his association method distinguished different emotional processes and not certain intellectual types (Jung, 1910).

Unfortunately, however, Jung did little more than identify three clinically observable types of abnormalities, namely; 1) an objective type with undisturbed reaction; 2) a so-called complex type with many disturbances in the experiment occasioned by the constellation of a complex; and 3) a so-called definition type whose reaction always gives rise to an explanation of the content of the stimulus word. This latter type is chiefly found in stupid persons, but can also occur in someone who is trying too hard not to

be taken as stupid.

He also makes mention of a distinction between the "definition" type and the "predicate" type. In the definition type, the intellectual significance of the stimulus word is rendered prominent, while in the predicate type, the emotional significance of word to the subject is the dominant theme.

He has since done little to quantify the scoring of his test, and although he states that it is sometimes possible to read the most intimate complexes from the results of the experiment without any previous knowledge of the subject, he does not give very clear rules as how to do this.

In 1914, Samuel Kohs (1914) became interested in the free association method as a means of understanding mental processes. His major contribution in this area was a delineation of the multiple factors which may, and do influence association such as age, sex, race, intelligence, occupation, beliefs, fatigue, emotion, attention, practise, etc., things not previously considered thoroughly when evaluating associative reactions.

Kohs went on to classify complex indicators into qualitative, quantitative, and physiological reactions. Among the thirty qualitative reactions mentioned by Kohs are such things as the content of the response itself, the manner in which it is given, perseveration, quotations, symbolism, and so on. The quantitative factor is the reaction time, i. e., the interval between the giving of the stimulus word and the pronouncing of the response. Physiological reactions are any physiological changes which may be detected and noticed with or without the use of special measuring instruments.

Kent and Rosanoff (1910) developed 100 relatively neutral words which

were administered to 1000 normal and 247 psychotic adults in an attempt to distinguish between the two groups on the basis of common, doubtful, and individual responses. Their method of scoring the reactions using an index of communality based on their own frequency tables provided an important step toward a more systematic interpretation of the reactions of the groups, at least, if not individuals.

The lack of adequate normative data for the Kent-Rosanoff test was underscored by the work of Woodrow and Lowell (1916) when they attempted to construct frequency tables for 100 stimulus words from 1000 Minneapolis school children aged 9 to 12 years. They found that the children's responses differed seriously from adults' with respect to frequency of various associations in quality, form, and quantity.

In an effort to secure more objective evidence for or against Jung's method of complex indicators, Hull and Lugoff (1921) studied the free association of 50 men and 50 women from various middle and upper class areas of Chicago, Duluth, and Madison using a slight modification of the Jung list. They devised a statistical formula (similar to Pearson's product moment coefficient of correlation) to get the coefficients of association which demonstrated that five of Jung's indicators were actually and significantly associated with complexes. These are reaction time, repetition (the most significant), assimilation, and defective reproduction.

By means of testing some diagnostic groupings with the Kent-Rosanoff list, Tendler (1945) achieved correlations ranging from .80 to .95 between certain psychiatric classifications and adjective-noun, delayed time,

individual and failing reactions. Additional and more technical experiments of this type are needed, however.

Rapaport, Gill and Schafer (1946) introduced a new method of examining thought processes with the word association tests. Their construct of an anticipation, an analytic and a synthetic phase provides a frame of reference for scoring and interpreting the test. Using a 60 item list of words with familial, home, oral, anal, aggressive and various sexual connotations, they classify reactions into one of 24 types. Jung's method of requiring the subject to produce the same response on the second administration is incorporated into their method. Depending on which of the 24 types of reaction given by the subject, the results can be interpreted as a breakdown in either of the three stages mentioned above. Thus a strong ego defense will yield conventional responses, while a weaker ego permits repressed ideas to be elicited more readily, or at least signal their presence by disturbing the associative process.

Studying the frequency of common associations, Dörken (1956) used a subtest of the Verdun Projective Battery, the Conformity Index, on 290 subjects ranging in age from 10 years to 79 years old. They found that there is a distinct rise and decline of common association with age but no apparent differences between the sexes. Through a comparison of his results with those of earlier investigators, Dörken noted a progressive increase in the percentage of common responses from 1910 through 1956. The percentage of agreement or communality of thought for the stimulus words used has increased in the past few decades. He concludes from this that the results can be

interpreted in terms of psycho-social development and the increase in group communications.

The work started by Snider (1954) and continued by Herr (1957) which is the basis for this thesis, uses a modified form of the Kent-Rosanoff association test. The rationale of this test is said to involve the concept frequently referred to as communality of thought. Snider, et alii, believed that normals should be able to yield responses more in common with others than the mentally ill (Snider, 1954).

A comprehensive study was done by Stanek (1956) to determine whether such factors as age, sex, and education influence responses given on the Loyola Language Study. The test was administered to 400 males and 400 females of the Chicago metropolitan area ranging in age from nineteen to fifty-four years and in educational levels from sixth grade through college and beyond. Results obtained show that age bears an inverse relationship to the Loyola Language Study test score, the younger adult being more able to attain communality of thought. The female population attained a higher score than the male. Education bears a constant relationship to test scores. The more educated a person is, the more likely for him to give greater number of common responses.

Guppy (1959) recently restandardized the Loyola Language Study on a group of 400 men and women in Seattle. He found that when the frequency of all responses to a stimulus word is taken into consideration in scoring, as is the case when standard scores are used, the standard scores computed for those responses, whether given by the Chicago or Seattle group, are essen-

tially the same. Any obtained differences in the standard scores can reasonably be attributed to chance variations in the stratified samples on which the two standardizations of the Loyola Language Study were bases.

Using three different methods of scoring responses' communalities, Herr (1957) was able to distinguish significantly between normal and schizophrenic subjects. He also performed an item analysis in order to pick out those items which contributed most in discriminating the groups. For each sex, and for each of two geographical regions, 25 most discriminating items were identified. This shortened test increased the overall screening efficiency of the test.

The evidence of the validity of this shortened form of the test was sought by three methods. 1.) An index of screening efficiency was computed for the total scores by subtracting the proportion of normals incorrectly identified from the proportion of patients correctly identified. They ranged from .64 to .71 for the male and female subjects. 2.) Phi coefficients for each of the twenty-five items were computed and converted into product-moment coefficients, on the assumption of continuity between normals and patients on communality of thought. The median coefficients ranged from .45 to .68. 3.) The ratings of psychologists on 50 Boston female patients were correlated with the scores on the shortened test. The product-moment coefficient of correlation between the two was .48, which is significant beyond the .01 level of confidence.

Reliability was estimated using the Spearman-Brown formula, or split-half method and ranged from .88 to .94 with a median of .92. The test-retest method for the 80 item test was .49 and for the shortened form, .55. The

correlation between the various scoring methods ranges from .93 to .96.

Stewart (1956) in an effort to establish the relationship between the Loyola Language Study score and IQ, and between the Loyola Language Study scores and scholastic achievement concluded that the Loyola Language Study cannot predict scholastic success in freshman year of college.

Trainor (1957) in a study of free and controlled associations on the Loyola Language Study states that free associations did differ from controlled associations for many stimulus words, and the order of presentation is not a factor to be considered in analyzing the difference between controlled and free associations.

Even (1958) compared the free and controlled responses of 200 college sophomore women and found that significant differences occurred 1) for the total test scores of the 200 women, 2) for the total test scores of each school, and 3) for the separate column scores on the two sets of tests. Controlled association responses showed a higher degree of communality of thought.

Despite the abundance of literature and investigations on association tests of both types with adults, there is still a very definite lack of research on this area with children. While some writers (Dorken, 1956; Woodrow and Lowell, 1916) have dealt with the associations of children on other tests, no effort has been made to our knowledge, as yet, to study the role and use of the Loyola Language Study with children. The present study is an attempt to gain further insight into the thought processes of children and into the possible extension of the Loyola Language Study for use with children.

CHAPTER III

PROCEDURE

In order to study the differences between free and controlled associations in early adolescents, the Loyola Language Study was selected and administered to pupils in the eighth grades of two parochial and three public schools in middle-class Chicago neighborhoods. The schools used in this study were from different areas within the city so as to account for possible local neighborhood biases and idiosyncrasies.

The test was administered to each group first as a free association test. The following directions printed on each test booklet were read aloud to the group before the test began. "Please write clearly beside each word below the first other word that each printed word calls to your mind."

After the group had completed the free association test, they were then given the same test, but with the following set of instructions. The directions were read aloud to the class before beginning the test proper.

"When people see or hear a word, they often think of another word. If you say the word, Stem, most people would think of flower. Some, but not the greatest number, might think of Pipe, Grass, Stop, and so forth.

"This study wants to find out what word you think the greatest number of people would be most likely to think of when they see or hear each of the words on the next two pages.

"Please write next to each of the words the one word which you think the greatest number of people would be most likely to think of when they see or hear the word in the list. Take as much time as you need to think about the word which seems to you to 'go along' with each printed word. Then choose the one word which you think the greatest number of people would be most likely to think of when they see or hear the given word. Write the one word which you choose beside the printed word. Do not skip any word.

"Remember, you are not asked to write down just any word that comes to your mind. You should write down the one word which you think the greatest number of people would be most likely to think of."

Copies of the test and directions can be found in Appendices I & II.

Since the Loyola Language Study was originally written for, and standardized on an adult population, the directions were modified for this study under the direction and with the help of a group of experienced grade school teachers. The words and grammatical constructions employed were such that it was felt that each child could easily understand and follow.

The test proper was carefully supervised by the test administrator, an assistant, and the classroom teacher to prevent copying or cheating by the subjects.

In scoring the test results the following criteria were observed. Any booklet with more than two omissions or multiple responses, i. e., more than one word responses to any stimulus on either test was rejected. Further, any test with more than two words illegible because of spelling or handwriting were not used. If a word was misspelled but could be ascertained by phonetic

sounding of the word, such words were not considered unintelligible and were, therefore, used in this study, except in double meaning words as pane--pain. For statistical handling, the final analysis was based upon 200 subjects, 100 boys and 100 girls.

Each stimulus word was tallied twice for each subject, once for the free association response and once for the controlled association response. This yielded a total number of 32,000 responses. Since the size of the population equalled 100, the total number of responses for each stimulus word was easily changed into percentages. To determine if differences existed between free and controlled association, the significance of the difference between the percentages for the response words was computed; the critical ratio determined; and the corresponding P for each of these words found in a Probability Table (Garrett, 1958).

CHAPTER IV

ANALYSIS AND INTERPRETATION

The first hypothesis to be tested was to determine if differences existed between free and controlled associations as measured by the words found in the Loyola Language Study. Data presented in Tables I and II show the highest percentages for each stimulus obtained under the two sets of instructions for the two sexes as well as the other words which also showed a significant difference under the varied conditions.

TABLE I

DIFFERENCES, CRITICAL RATIOS AND PROBABILITIES FOR BOYS ON THE LLS AS ELICITED UNDER FREE AND CONTROLLED ASSOCIATION DIRECTIONS

Stimulus	Response	Percentages		Difference in Percentage	C/R
		Free	Controlled		
soldier	army	30	44	14[b]	3.04
butterfly	insect	19	31	12[b]	2.70
long	short	61	39	22[c]	4.00
head	brain	4	16	12[b]	2.66
anger	mad	50	62	12[a]	2.22

(Table continued on next page).

TABLE I--CONTINUED

Stimulus	Response	Percentages		Difference in Percentage	C/R
		Free	Controlled		
dark	night	17	29	12[a]	2.44
dark	light	48	29	19[c]	3.45
dark	black	8	22	14[b]	2.80
red	color	23	40	17[b]	3.33
loud	noise	16	29	13[a]	2.54
eating	food	45	59	14[b]	2.97
rough	tough	36	25	11[a]	2.29
heavy	light	47	32	15[b]	3.00
high	low	44	26	18[c]	3.52
white	black	45	30	15[a]	2.50
white	color	11	26	15[b]	3.25
king	queen	58	45	13[a]	2.20
deep	shallow	34	21	13[a]	2.54
sleep	awake	21	9	12[b]	2.66
black	white	48	27	21[c]	3.96
table	chair	51	41	10[a]	2.04
quiet	loud	34	17	17[b]	3.14
hard	soft	53	37	16[b]	2.90
hard	rock	4	13	9[a]	2.30
blue	color	14	25	11[a]	2.29

(Table continued on next page).

TABLE I--CONTINUED

Stimulus	Response	Percentages		Difference in Percentage	C/R
		Free	Controlled		
sweet	sour	41	27	17[b]	2.69
sweet	sugar	11	22	11[a]	2.00
comfort	rest	4	12	8[b]	2.66
soft	hard	52	34	18[c]	3.82
short	long	46	28	18[b]	3.39
short	small	5	20	15[b]	3.13
cold	hot	33	22	11[b]	2.68
whiskey	drink	21	35	14[b]	2.85
yellow	color	21	33	12[a]	2.22
house	live	7	16	9[a]	2.00
sickness	doctor	5	15	10[a]	2.43
stove	cook	13	21	8[a]	2.16
baby	child	12	23	11[a]	2.39
moon	sun	33	21	12[a]	2.44
dream	sleep	24	37	13[a]	2.60
street	car	8	18	10[a]	2.50
bed	sleep	44	65	21[c]	3.78
child	boy	18	8	10[a]	2.08

(Table continued on next page).

TABLE I--CONTINUED

Stimulus	Response	Percentages		Difference in Percentage	C/R
		Free	Controlled		
woman	man	58	45	13[a]	2.54
butter	bread	31	43	12[a]	2.22

[a]Significant at the .05 level.

[b]Significant at the .01 level.

[c]Significant at the .001 level.

TABLE II

DIFFERENCES, CRITICAL RATIOS AND PROBABILITIES FOR GIRLS ON THE LLS AS ELICITED UNDER FREE AND CONTROLLED ASSOCIATION DIRECTIONS

Stimulus	Response	Percentages		Difference in Percentage	C/R
		Free	Controlled		
soldier	army	31	46	15[b]	2.88
butterfly	insect	18	32	14[b]	3.02
long	short	62	44	18[c]	3.75
dark	light	53	35	18[c]	3.46
red	color	18	37	19[b]	3.39
eating	food	38	58	20[b]	3.33
joy	happiness	11	32	21[c]	3.68
heavy	light	51	33	18[c]	3.67

(Table continued on next page).

TABLE II--CONTINUED

Stimulus	Response	Percentages		Difference in Percentage	C/R
		Free	Controlled		
high	low	46	35	11[a]	2.20
white	black	43	29	14[a]	2.54
king	queen	67	53	14[b]	2.85
deep	shallow	26	13	13[b]	3.02
sleep	rest	13	25	12[b]	3.00
sleep	awake	24	9	15[c]	3.84
black	color	13	4	9[a]	2.43
hammer	saw	10	1	9[b]	2.72
thirsty	drink	18	37	19[c]	3.65
blue	red	23	9	14[b]	2.97
sweet	candy	19	29	10[a]	2.37
sweet	sour	44	28	16[b]	3.20
working	labor	4	16	12[c]	3.43
comfort	rest	9	17	8[a]	2.16
short	long	42	23	19[c]	4.04
beautiful	pretty	24	39	15[b]	3.12
beautiful	ugly	29	9	20[c]	4.44
yellow	color	17	31	14[b]	2.64
scissors	cut	65	76	11[a]	2.39
doctor	nurse	48	36	12[a]	2.49

(Table continued on next page).

TABLE II--CONTINUED

Stimulus	Response	Percentages		Difference in Percentage	C/R
		Free	Controlled		
wish	hope	16	27	11[b]	3.33
wish	dream	14	24	10[b]	2.78
river	water	23	45	22[c]	2.93
river	lake	17	39	22[c]	3.92
mountain	high	22	32	10[a]	2.12
stove	cook	13	27	14[b]	3.17
girl	female	1	12	11[b]	3.05
baby	child	11	26	15[c]	3.71
moon	sun	44	33	11[a]	2.61
thief	robber	24	35	11[b]	2.82
dream	sleep	25	34	9[a]	2.19
street	car	12	22	10[a]	2.39
health	doctor	6	14	8[c]	3.42
ocean	water	21	38	17[c]	3.54
tobacco	cigarette	21	35	14[b]	3.18
music	song	9	19	10[a]	2.50

[a]Significant at the .05 level.

[b]Significant at the .01 level.

[c]Significant at the .001 level.

Tables I and II, then, show that of those pairs of frequencies which were large enough to be tested for significance, there are significant differences between free and controlled associations on the Loyola Language Study at the eighth-grade level in 45 instances for the boys and 44 instances for the girls. A quick analysis of these words points up the fact, however, that 44 percent of the words found to be significantly different for the boys and 36 percent of those for the girls showed higher agreement on the free association test than on the controlled association test, and that therefore, while in some instances the controlled association test may have been a factor in eliciting greater communality of thought, in others it may have also lowered it.

A further breakdown of the words in which this reversal occurred reveals that 70 percent of the boys' words and 62 percent of the girls' words were, what are generally considered as "easy opposites," e. g., soft--hard, dark--light, etc. Under the conditions imposed by the directions on the Loyola Language Study for children, then, these words showed less agreement than they did under freer and less restricting directions.

The mean number of responses to each stimulus word and the standard deviations presented in Table III show that the number of different responses to each stimulus word was less for both sexes under the controlled situation than under the free. Percentage-wise there was a decrease of 12 percent for boys and of 11 percent for the girls under the different sets of instructions. Furthermore, the number of singletons, i. e., responses occuring only once to any particular stimulus word, decreased by 19 percent for the boys and by

17 percent for the girls. This would seem to indicate an overall increase in common responses under the controlled situation and that the children at the eighth-grade level are able to manifest greater communality of thought when directed to do so.

TABLE III

THE MEAN AND SD FOR THE STIMULUS WORDS FOR GIRLS AND BOYS ON THE TWO TESTS

Source	Mean	SD
Boys Free	30	7.55
Boys Controlled	27	7.21
Girls Free	27	7.05
Girls Controlled	24	6.77

Along the same line, out of the 80 stimulus words presented only 11 percent of them for the boys and 15 percent for the girls, had more than one response which showed a significant difference under the varied sets of instructions. Table IV reveals that two or three responses accounted for the bulk of responses. Table IV would also seem to substantiate what was said above, namely, the Loyola Language Study used as a controlled association test did trend to raise the degree of agreement for both sexes.

TABLE IV

PERCENT OF POPULATION GIVING THE HIGHEST FREQUENCY RESPONSES

Groups	Percentages	
	First Two Responses	First Three Responses
Boys Controlled	48	70
Girls Controlled	50	80
Boys Free	39	68
Girls Free	48	69

Tables III and IV indicate that there was greater communality of thought among the girls than among the boys. Although the differences are not so large as to be statistically discriminating, they do seem to support the "popular" belief that women are better able to express empathy than men because women are better able to understand and think along the same lines as others. On the other hand, though, the smaller number of individual or singleton responses on the part of the girls may also indicate and account for a greater degree of stereotyped thinking and behavior in young teen-age girls than in boys of the same age. However, the results found in this study are inadequate for any definite conclusions along this line.

From this study, as with similar studies on the Loyola Language Study (Del Vecchio, 1957; Trainor, 1957; Even, 1958), then, it has been empirically shown that there are significant differences between the free and controlled

associations of eighth graders to a number of words on the Loyola Language Study, and it is felt, therefore, that norms similar to those set up for adults should also be worked out for eighth graders. Using a method of square roots similar to that employed by Stanek in his study (Stanek, 1956), norms have been worked out for eighth graders and are listed in Appendix IV. For all words, except singletons, the square root of the percentage of responses on the controlled association test only, were computed and multiplied by two, to arrive at the score. Finally any obtained value of .75 or more above the number was given the next higher value, e. g., a score of 2.75, 4.89, etc. were given a value of 3 and 5 respectively and a score of 2.59 or 8.74 were given a value of 2 and 8 respectively. Appendix III contains a sample working out of square root scores.

CHAPTER V

SUMMARY AND CONCLUSIONS

In order to determine the differences between free and controlled associations in early adolescents, the Loyola Language Study was administered to pupils in the eighth grade of two parochial and three public schools in middle-class neighborhoods of metropolitan Chicago. The results obtained from tallying the responses of 100 boys and 100 girls on the two tests of the Loyola Language Study showed that there are 45 words for the boys and 42 words for the girls which differed at the .05 level or better. Forty-four percent of the words found to differ among the boys, had a higher percentage on the free than on the controlled association test. For the girls, 36 percent were higher on the free association test. An analysis of the words showing this reversal revealed that 70 percent of the boys and 62 percent of the girls' responses were "easy opposites," such as dark--light, hard--soft, etc. The results obtained also showed an increase in the percent of common responses under the controlled association set of instructions. Although not statistically significant, the girls tended to show a higher degree of communality of thought than the boys.

While the entire list of words did not differ significantly, there is a sufficiently large number which did, therefore, norms were worked out in a manner similar to that used by Stanek (1956) in his study on the adult population. One exception was made to Stanek's method; words occuring only once

in this study were scored one instead of doubling the square root value obtained as was done for all other words, since the size of the sample group was only 100 subjects of each sex.

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APPENDIX I

COPY OF FREE ASSOCIATION BOOKLET

APPENDIX II

COPY OF CONTROLLED ASSOCIATION BOOKLET

APPENDIX III

SAMPLE OF HOW NORMS WERE DERIVED FROM SQUARE ROOT OF FREQUENCY

SAMPLE OF HOW NORMS WERE DERIVED
FROM SQUARE ROOT OF FREQUENCY

Stimulus	Response	f	Square Root	x 2	Score
black	white	38	6.164	12.328	12
scissors	cut	76	8.718	17.436	17
man	woman	45	6.708	13.416	13
thirsty	water	48	6.928	13.856	14

APPENDIX IV

NORMS FOR EIGHTH GRADERS

NORMS FOR THE LLS FOR EIGHTH GRADE BOYS

soldier (11)		hungry (8)		butterfly (15)		long (12)	
army	13	eat	9	animal	4	big	5
boy	3	eating	3	beautiful	5	distance	5
fight	4	food	14	beauty	3	far	4
fighter	3	starvation	4	bird	5	large	3
G. I.	3	starve	4	bug	3	length	3
man	4	starved	4	caterpillar	4	mile	3
officer	3	starving	4	collection	3	road	3
sailor	4	thirsty	3	colorful	3	short	12
service	3			colors	3	small	3
uniform	3			flower	4	stretch	3
war	8			fly	5	tall	4
				insect	11	wait	2
				moth	4		
				pretty	6		
				wings	3		

head (15)		anger (8)		afraid (9)		fruit (10)	
arm	3	fight	3	brave	3	apple	12
body	7	furious	3	dark	4	banana	3
brain	8	hate	3	fear	6	delicious	3
face	7	mad	16	fright	3	eat	7
foot	4	madness	3	frighten	3	food	5
hair	5	mean	3	frightened	5	good	3
leader	3	rage	3	scared	14	juicy	3
man	3	temper	4	shiver	3	orange	5
neck	4			very	3	tree	5
round	4					vegetable	7
shoulder	3						
skull	3						
tail	3						
toe	3						
top	4						

NORMS FOR THE LLS FOR EIGHTH GRADE BOYS

dark (4)		red (10)		loud (11)		bath (8)		eating (8)	
black	9	apple	3	blare	3	clean	7	ate	4
color	3	blue	4	hear	3	cool	3	dinner	3
light	10	blood	4	noise	11	Saturday	3	drinking	3
night	11	bright	3	noisy	5	shower	3	eat	3
		color	12	quiet	4	soap	6	enjoy	3
		fire	3	scream	3	tub	7	food	15
		green	5	shout	3	wash	9	hungry	5
		orange	3	soft	8	water	10	supper	3
		rose	3	sound	4				
		white	7	voice	3				
				yell	3				

joy (7)		rough (11)		heavy (12)		high (10)		white (10)	
fun	9	angry	3	big	4	airplane	3	black	11
glad	3	bumpy	3	box	3	altitude	5	blue	3
happiness	9	coarse	3	hard	3	big	3	clean	3
happy	11	easy	3	iron	3	building	3	clouds	3
laugh	3	hard	6	lead	5	height	3	color	10
sad	3	road	6	lift	3	low	10	light	5
sorrow	5	rugged	5	light	11	mountain	7	red	3
		sandpaper	4	load	6	sky	4	sheet	4
		smooth	6	pounds	3	tall	7	shirt	3
		strong	4	steel	3	up	5	snow	5
		tough	10	ton	4				
				weight	8				

command (10)		sour (11)		king (7)		deep (12)		sleep (9)	
army	5	bitter	7	England	3	dark	3	awake	6
boss	3	cream	7	head	3	depth	3	bed	10
commander	3	cut	3	leader	3	down	7	dream	6
do	5	food	3	queen	13	far	3	nap	4
general	3	lemon	6	royalty	3	hole	5	night	4
obey	5	mad	3	ruler	9	low	3	rest	6
officer	5	milk	8	throne	4	ocean	6	snore	3
order	12	rotten	3			sea	5	tired	6
sergeant	3	spoiled	3			shallow	9	well	3
tell	5	sweet	9			water	8		
		taste	3			well	3		

NORMS FOR THE LLS FOR EIGHTH GRADE BOYS

black (7)		hammer (8)		table (7)		thirsty (5)		quiet (15)	
blue	3	hard	3	chair	13	drink	10	cemetary	4
board	3	head	3	cloth	5	dry	7	hospital	5
coal	3	hit	5	eat	7	hot	3	library	3
color	8	nail	15	food	6	soda	3	loud	8
dark	10	pound	4	furniture	5	water	14	noise	5
night	6	saw	3					noiseless	5
white	10	tool	6	leg	3			noisy	5
		work	3	wood	4			peace	3
								peaceful	4
								room	3
								silence	3
								sleep	3
								soft	5
								still	4
								talk	3

hard (11)		blue (9)		sweet (9)		stomach (11)		working (14)	
cement	3	black	3	bitter	4	ache	10	doing	3
difficult	3	color	10	candy	9	belly	3	hard	10
hammer	3	green	4	flower	3	body	6	job	6
iron	3	red	5	good	4	chest	3	labor	6
rock	7	shirt	3	honey	3	eat	5	laboring	3
rough	3	sky	9	music	3	food	10	lazy	3
soft	12	water	6	nice	5	hungry	3	loafing	3
steel	4	white	5	sour	10	insides	3	men	3
strong	3	yellow	3	sugar	9	intestines	3	money	3
tough	3					tummy	3	occupation	3
wood	3					upset	3	playing	4
								resting	3
								tired	3
								work	5

NORMS FOR THE LLS FOR EIGHTH GRADE BOYS

comfort (13)		soft (11)		short (12)		beautiful (13)	
bed	5	bed	7	distance	4	butterfly	3
chair	5	chair	3	little	5	color	3
comfortable	3	comfort	3	long	10	flowers	3
ease	5	comfortable	3	man	3	girl	6
easy	3	feathers	3	nap	3	house	3
home	5	fluffy	3	person	3	lovely	4
lie	3	hard	11	rope	3	nice	4
luxury	4	light	3	skirt	3	picture	3
relax	4	nice	4	small	9	pretty	9
rest	7	pillow	8	story	3	scenery	3
sleep	6	restful	3	stubby	3	sky	3
soft	5			tall	4	ugly	8
uncomfortable	3					wonderful	4

cold (11)		whiskey (9)		yellow (16)		window (10)	
dark	3	alcohol	5	banana	5	broken	3
day	4	beer	6	blue	5	clear	3
freeze	4	bum	3	bright	3	door	5
freezing	4	drink	12	butter	3	glass	13
hot	9	drunk	8	butterfly	3	look	3
ice	6	liquor	7	canary	3	open	3
snow	3	sour	3	color	11	opening	3
warm	6	strong	3	coward	3	pane	8
water	6	wine	3	fairy	3	shade	3
weather	3			flower	3	sill	4
winter	7			green	4		
				hair	3		
				light	3		
				orange	3		
				red	3		
				sun	4		

NORMS FOR THE LLS FOR EIGHTH GRADE BOYS

scissors (8)		foot (12)		doctor (17)		wish (13)		house (13)	
cloth	3	ankle	3	cure	3	ask	3	barn	3
cut	16	body	3	dentist	3	bone	3	big	4
cutters	3	feet	7	doc	3	dream	8	building	4
cutting	4	hand	4	health	3	for	3	comfort	3
knife	5	head	4	help	5	granted	3	door	3
paper	4	heel	3	helper	3	hard	3	garage	3
sharp	6	inches	3	hospital	3	hope	10	home	12
tool	3	legs	4	man	3	pray	3	live	8
		shoe	9	medicine	6	think	4	lot	3
		sore	4	M. D.	3	true	4	new	3
		toes	7	nurse	10	want	7	people	3
		walk	7	office	3	well	4	shelter	3
				pain	3	wished	3	wife	3
				patient	3				
				physician	5				
				sick	6				
				sickness	4				

justice (10)		river (11)		sickness (13)		mountain (10)		stove (11)	
court	6	bank	3	bad	3	big	3	cook	9
done	3	boat	4	cancer	3	climb	4	cooking	4
injustice	3	bridge	3	disease	4	high	10	fire	4
judge	4	deep	3	doctor	8	hill	10	food	3
law	10	fish	3	fever	3	peak	3	furnace	3
man	3	lake	7	health	8	rocks	3	heat	9
peace	10	Mississippi	3	healthy	4	snow	5	hot	7
police	4	ocean	4	ill	9	stream	3	oven	4
right	3	stream	6	illness	5	tall	3	pipe	4
truth	3	swimming	3	sick	3	valley	3	range	3
		water	12	sorrow	3			warm	4
				weak	3				
				well	3				

NORMS FOR THE LLS FOR EIGHTH GRADE BOYS

girl (9)		salt (15)		man (12)		cheese (16)		baby (14)	
beautiful	3	bitter	4	big	4	bread	4	boy	5
boy	15	flavor	3	boy	6	butter	3	child	9
child	3	food	5	gentleman	3	cow	3	crib	3
dress	4	pepper	12	girl	3	cream	3	cry	6
female	6	salty	3	handsome	3	eat	5	cute	5
friend	3	seasoning	4	lady	3	food	8	girl	3
nice	3	sour	3	male	7	good	3	kid	3
pretty	3	spice	3	men	3	green	3	infant	5
woman	4	sugar	5	person	3	hole	5	little	4
		table	3	strong	3	milk	5	mother	3
		taste	3	woman	13	moon	3	sitter	3
		tasty	3	work	3	mouse	8	small	7
		thirsty	3			sandwich	3	tiny	3
		water	6			stink	3	young	3
		white	3			swiss	4		
						yellow	3		

moon (13)		spider (10)		bread (11)		whistle (20)		carpet (7)	
big	3	animal	3	butter	11	blew	3	covering	3
bright	3	ant	3	dough	4	blow	8	floor	8
cheese	3	black	3	eat	5	boy	3	new	3
full	3	bite	3	flour	3	call	3	rug	15
light	6	bug	5	food	8	dog	3	soft	5
night	6	crawl	3	fresh	3	girl	3	tacks	3
planet	6	fly	3	loaf	3	horn	3	walk	3
round	3	insect	9	sandwich	3	instrument	3		
shine	3	legs	4	water	3	loud	5		
sky	4	web	12	wheat	5	music	3		
star	5			white	3	noise	8		
sun	9					sharp	3		
yellow	3					shrill	3		
						sing	4		
						sound	3		
						song	3		
						stop	3		
						tune	4		
						train	4		
						yell	3		

NORMS FOR THE LLS FOR EIGHTH GRADE BOYS

needle (7)		hand (9)		thief (9)		dream (10)		trouble (12)	
eye	3	arm	7	bad	3	bed	3	bad	9
haystack	3	body	3	bandit	3	cloud	3	cops	3
pin	6	finger	12	burglar	5	nightmare	5	danger	3
sew	8	fist	3	crook	8	sleep	12	fight	4
sewing	3	flesh	3	jail	3	sleeping	3	jail	3
sharp	6	foot	6	police	3	think	5	mischief	3
thread	14	hold	3	rob	4	thought	5	police	5
		large	3	robber	11	true	3	run	3
		shake	4	steal	8	vision	3	scared	3
						wish	6	sorrow	3
								worry	3
								wrong	3

religion (7)		street (13)		health (16)		ocean (12)		bed (9)	
belief	3	avenue	6	bad	3	Atlantic	3	couch	3
Catholic	7	block	3	body	3	boat	4	lay	3
church	11	car	8	doctor	6	deep	6	mattress	3
communism	3	corner	4	good	8	lake	4	rest	3
faith	7	house	3	happiness	3	large	3	sleep	16
God	9	main	3	happy	3	Pacific	3	sofa	3
good	3	number	3	healthy	3	river	3	soft	5
		pavement	3	hygiene	3	salty	3	spread	3
		ride	3	ill	4	sea	9	warm	3
		road	8	O.K.	3	vast	3		
		sidewalk	3	sick	6	water	11		
		wood	3	sickness	6	waves	3		
		walk	3	strong	5				
				wealth	3				
				welfare	3				
				well	3				

NORMS FOR THE LIS FOR EIGHTH GRADE BOYS

child (16)		tobacco (8)		woman (8)		cabbage (10)		citizen (14)	
adult	3	chew	3	beauty	3	cook	3	America	3
babe	3	cigar	6	dress	3	corn-beef	3	American	5
baby	9	cigarette	11	female	5	eat	5	community	4
boy	5	leaf	3	girl	6	food	8	D.P.	3
children	3	pipe	5	housewife	3	garden	4	good	3
cry	3	smoke	11	lady	6	green	4	man	4
hood	3	smoking	3	man	14	head	5	mayor	3
kid	7	weed	3	mother	3	leaf	3	member	3
lad	3					lettuce	7	neighbor	3
little	5					vegetable	10	people	7
man	3							person	10
play	3							vote	3
school	3							U.S.	3
small	7							U.S.A.	3
toy	3								
young	4								

earth (12)		lion (9)		butter (14)		music (16)	
big	4	animal	10	bread	13	art	3
dirt	6	big	3	cheese	3	band	4
ground	7	cat	4	cow	3	beautiful	3
land	3	fierce	4	cream	3	instrument	4
Mars	3	king	3	fat	4	loud	3
moon	5	roar	3	fly	4	noise	4
plant	5	tiger	12	food	5	note	6
planet	8	vicious	3	good	3	piano	4
round	6	zoo	3	knife	4	play	3
soil	5			melt	3	sing	4
sun	3			milk	4	singing	3
world	5			soft	4	soft	3
				tasty	3	song	7
				yellow	3	sound	4
						sweet	6
						tune	3

NORMS FOR THE LIS FOR EIGHTH GRADE GIRLS

soldier (10)		hungry (7)		butterfly (12)		long (12)		head (15)	
army	13	eat	9	animal	3	big	3	fear	3
battle	3	food	14	beautiful	5	distance	3	body	8
fight	3	full	3	birds	3	distant	3	brain	6
fighting	3	people	3	bug	4	far	4	eyes	3
gun	3	starve	3	caterpillar	6	large	3	face	7
man	4	starved	5	color	3	length	4	foot	6
sailor	3	starving	3	flower	4	road	3	hair	6
service	3			fly	5	rope	3	neck	3
uniform	3			insect	11	short	13	person	4
war	9			moth	5	story	3	round	3
				pretty	4	tall	5	shoulders	3
				wings	4	wait	3	skull	3
								think	4
								toe	3
								top	4

anger (7)		afraid (9)		fruit (8)		dark (5)		red (10)	
fear	3	dark	4	apple	13	afraid	3	apple	3
fight	3	fear	6	banana	4	black	8	blood	3
happiness	3	frighten	4	delicious	3	light	12	blue	6
mad	15	frightened	5	eat	4	night	12	bright	5
madness	4	scare	3	food	7	room	3	color	12
mean	4	scared	14	orange	6			fire	4
temper	6	trouble	3	tree	4			flag	3
		unafraid	3	vegetable	7			green	4
		war	3					hair	3
								white	6

loud (11)		bath (10)		eating (7)		joy (9)		rough (11)	
boisterous	3	bathe	3	ate	3	Christmas	3	boy	4
bright	3	bathing	3	digesting	3	fun	6	bumpy	4
noise	9	clean	10	dinning	3	glad	3	easy	3
noisy	9	cool	4	drinking	5	gladness	4	fight	3
quiet	4	shower	4	enjoy	3	happiness	11	hard	5
shout	4	soap	6	food	15	happy	11	man	3
soft	10	tub	6	hungry	6	laugh	3	mean	5
sound	3	wash	8			laughter	3	road	4
talk	4	washing	3			sorrow	5	smooth	5
tremendous	3	water	8					tough	11
voice	3							work	3

NORMS FOR THE LLS FOR EIGHTH GRADE GIRLS

heavy (11)		high (9)		white (10)		command (10)		sour (9)	
big	4	airplane	3	black	11	demand	4	bitter	7
fat	4	big	3	blue	4	do	5	cream	6
hard	5	building	6	clean	5	duty	3	food	3
huge	3	long	3	color	8	general	3	lemon	6
large	4	low	12	dark	3	obey	5	milk	8
light	11	mountain	6	ghost	3	officer	4	old	3
load	5	sky	4	light	5	order	13	spoiled	4
package	3	tall	7	pale	3	soldier	3	sweet	9
strong	3	up	5	paper	4	tell	5	taste	3
weight	5			people	3	wish	3		
weighty	3								

king (7)		deep (15)		sleep (11)		black (7)		hammer (4)	
country	3	below	3	awake	6	blue	3	head	3
emperor	3	dark	3	bed	9	cat	3	nail	16
England	3	depth	3	dream	5	color	7	pound	4
majesty	3	down	5	night	4	dark	9	tool	7
queen	14	far	3	rest	10	hair	3		
rich	3	high	4	slumber	4	night	6		
ruler	8	hole	6	sound	3	white	12		
		long	3	soundly	4				
		low	6	tired	5				
		ocean	6	wake	3				
		river	5	well	3				
		sea	3						
		shallow	7						
		water	8						
		well	3						

table (9)		thirsty (4)		quiet (14)		hard (15)		blue (11)	
bench	3	drink	12	hospital	4	difficult	3	black	4
chair	16	dry	4	loud	8	easy	3	color	10
cloth	3	hungry	3	night	3	floor	3	dress	3
desk	3	water	14	noise	4	heavy	3	flag	3
eat	3			noiseless	3	rock	5	pink	3
food	4			noisy	6	rough	4	red	6
furniture	3			peace	4	soft	13	sea	3
leg	3			peaceful	4	solid	4	sky	10
plate	3			person	3	steel	3	water	4
				rest	3	stone	3	white	3
				silence	4	tough	3	yellow	3
				silent	4	unbreakable	3		
				soft	4	wall	3		
				still	7	wood	3		
						work	4		

NORMS FOR THE LIS FOR EIGHTH GRADE GIRLS

sweet (8)		stomach (11)		working (12)		soft (13)		comfort (16)	
bitter	3	ache	7	hard	9	bed	4	bed	6
candy	11	belly	3	hours	3	chair	4	chair	5
good	4	body	9	job	7	comfort	4	ease	5
lovely	3	digest	3	loafing	3	comfortable	3	happy	3
nice	4	eat	6	labor	8	cushion	3	help	3
sour	10	eating	3	laboring	3	fluffy	3	home	4
sugar	7	food	9	men	3	hard	11	lazy	3
taste	5	hungry	4	money	4	kitten	3	leisure	3
		intestine	3	pay	3	light	3	peace	3
		tummy	3	playing	6	loud	3	pleasure	3
		upset	3	slaving	3	nice	3	relax	4
				tired	3	pillow	8	relaxed	3
						smooth	5	rest	8
								sleep	3
								soft	4
								uncomfortable	3

short (12)		beautiful (12)		cold (12)		whiskey (9)		yellow (14)	
child	3	beauty	3	chilly	3	alcohol	3	blue	3
dress	3	cute	3	cool	3	beer	7	bright	3
girl	3	flower	3	day	4	drink	11	butter	3
little	5	girls	5	freeze	3	drinking	3	canary	3
long	9	gorgeous	3	freezing	5	drunk	7	color	11
midget	3	lady	3	hot	11	liquor	8	dress	3
person	3	lovely	5	ice	7	sour	3	flower	4
small	8	pretty	12	snow	3	tavern	3	green	5
story	4	sky	3	warm	6	wine	5	hair	5
stout	3	ugly	6	water	3	wine	5	hair	5
stubby	3	woman	3	weather	4			pencil	3
tall	8	wonderful	3	winter	7			rose	3
								sun	5
								Thursday	3

NORMS FOR THE LIS FOR EIGHTH GRADE GIRLS

window (13)		scissors (7)		foot (13)		doctor (14)		wish (13)	
air	4	closed	3	ankle	3	cures	3	ask	3
broken	3	cloth	3	body	4	dentist	3	bone	3
door	6	cut	17	feet	6	help	3	desire	3
glass	11	knife	3	hand	3	hospital	3	dream	10
house	3	paper	3	head	4	illness	4	granted	3
light	3	sharp	4	hurt	4	lawyer	3	hard	3
look	4	tool	3	inch	3	man	4	hope	10
open	4			leg	6	medicine	5	luck	3
pane	3			ruler	3	nurse	12	star	3
scenery	3			shoe	9	operation	3	thought	3
see	3			sore	3	physician	4	thinking	3
shade	4			toe	8	sick	5	true	4
sill	3			walk	7	sickness	5	want	6
						surgeon	3		

house (9)		justice (6)		river (10)		sickness (5)		mountain (8)	
building	5	court	6	bank	3	disease	5	climb	6
home	13	crime	3	deep	3	doctor	9	Everest	3
live	6	judge	5	fish	3	health	10	high	11
own	3	law	9	lake	8	ill	10	hill	10
people	3	peace	10	Mississippi	3	illness	6	rock	3
rooms	3	right	16	ocean	3			snow	3
shelter	4			sea	3			top	3
white	3			stream	6			valley	3
wife	3			swim	3				
				water	13				

stove (10)		girl (6)		salt (6)		man (8)		cheese (15)	
cook	10	boy	15	food	4	adult	3	bread	4
cooking	3	child	3	pepper	15	boy	6	butter	4
fire	5	dress	3	seasoning	6	handsome	5	cake	3
gas	3	female	6	spice	3	lady	4	cow	4
heat	7	pretty	5	sugar	5	male	5	cracker	6
hot	9	woman	4	tasty	3	person	3	cream	4
oven	5					strong	3	eat	6
pipe	3					woman	15	food	6
range	3							milk	5
sink	3							mouse	9
								sandwich	5
								sour	3
								strong	3
								taste	3
								yellow	3

NORMS FOR THE LLS FOR EIGHTH GRADE GIRLS

baby (17)		moon (11)		spider (8)		bread (8)		whistle (14)	
adult	3	bright	4	black	3	butter	15	blow	9
born	4	earth	3	bug	8	dough	3	call	3
bottle	3	light	5	crawl	3	eat	4	horn	3
boy	5	love	3	fly	3	food	7	hum	3
child	10	night	6	insect	9	rye	3	loud	4
cry	6	romance	3	legs	5	sandwich	3	noise	9
cute	3	shines	3	ugly	4	water	3	police	3
girl	3	sky	4	web	11	white	3	shrill	5
infant	5	star	8					sing	5
little	4	sun	11					sound	3
mother	3	yellow	3					stop	4
person	3							toy	3
play	3							tune	4
small	5							wind	3
tiny	4								
tot	3								
toy	3								

carpet (6)		needle (4)		hand (10)		thief (13)		dream (8)	
floor	8	pin	3	arm	9	bad	4	daze	3
house	3	sew	9	body	4	burglar	5	nightmare	5
rug	15	sharp	3	finger	11	crook	3	sleep	11
soft	3	thread	16	foot	6	honest	3	think	4
spot	3			glove	3	money	3	thought	3
walk	4			hold	4	rob	4	true	3
				nail	3	robber	12	wish	9
				touch	3	robbery	3	wonderful	3
				work	5	steal	9		
				wrist	3	stealer	3		
						stealing	3		
						stolen	3		
						take	3		

NORMS FOR THE LJS FOR EIGHTH GRADE GIRLS

trouble (14)		religion (9)		street (13)		health (16)		ocean (8)	
afraid	3	belief	4	avenue	4	bad	3	blue	5
bad	9	Catholic	6	block	3	body	3	deep	4
court	3	Christian	3	car	9	cheerful	3	lake	5
delinquent	3	church	10	city	5	clean	3	river	3
fear	3	faith	8	corner	3	condition	3	sea	10
fight	4	God	9	cross	3	doctor	7	ship	3
hard	3	Lutheran	3	house	4	good	4	water	12
hardship	3	race	4	light	3	happiness	5	waves	4
help	3	worship	4	live	3	ill	3		
mischief	5			number	3	joy	3		
no	3			road	9	physician	3		
peace	3			sidewalk	5	sick	7		
pleasure	4			walk	4	sickness	7		
						strength	3		
						wealth	3		
						well	4		

bed (7)		child (14)		tobacco (6)		woman (9)		cabbage (9)	
covers	4	adult	5	chew	3	beautiful	3	corn-beef	3
mattress	3	baby	10	cigar	4	child	3	eat	5
people	3	boy	3	cigarette	12	female	6	food	6
rest	4	children	3	leaf	3	girl	5	garden	3
sick	3	girl	3	pipe	8	lady	6	green	6
sleep	16	infant	4	smoke	11	man	14	head	5
soft	5	kid	5			mother	3	lettuce	8
		little	6			nice	3	salad	5
		mother	4			person	3	vegetable	10
		play	5						
		person	3						
		small	6						
		toy	3						
		young	4						

citizen (11)		earth (11)		lion (10)		butter (11)		music (16)	
America	4	ball	3	animal	10	bread	15	art	3
American	6	dirt	5	beast	5	cheese	4	band	3
country	3	ground	5	cage	3	cream	3	beautiful	4
foreigner	4	heaven	3	cat	3	fly	3	dance	4
free	3	land	5	ferocious	3	food	5	instrument	4
good	5	moon	4	fierce	6	good	3	listen	3
member	3	planet	4	king	3	knife	3	notes	5
people	6	round	6	roar	3	milk	3	piano	6

(Table continued on next page).

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citizen (11)		earth (11)		lion (10)		butter (11)		music (16)	
person	10	soil	5	tiger	10	spread	3	radio	3
U.S.	6	sphere	3	zoo	5	sweet	3	sing	5
voter	5	world	3			yellow	4	singing	3
								soft	4
								song	9
								sound	4
								sweet	5
								violin	3

APPROVAL SHEET

The thesis submitted by Donald J. Rumann has been read and approved by a board of three members of the Department of Psychology.

The final copies have been examined by the director of the thesis and the signature which appears below verifies the fact that any necessary changes have been incorporated, and that the thesis is therefore given final approval with reference to content, form, and mechanical accuracy.

The thesis is therefore accepted in partial fulfillment of the requirements for the Degree of Master of Arts.

November 22, 1961
Date

Frank J. Kobler
Signature of Adviser